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(54) **Dispensing arrangement for a liquid soap dispensing apparatus**

Abgabevorrichtung für einen Flüssigseifenspender

Dispositif distributeur pour un distributeur de savons liquides

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Description

This invention concerns a dispensing arrangement for liquid soap dispensing apparatus, which is improved concerning the operations of assembly within the apparatus, in connection with the supply cartridge or bag, as well as mounting of the dispensing valve therewithin. As it is known, a type of supplying arrangement which is becoming increasingly popular and is already widely used in liquid soap dispensers, uses disposable bags or cartridges, rather than refillable containers. In general, said disposable bags comprise a loose and shapeless plastic material container which is completely sealed except for a dispersing tube feeding to the outside and integral therewith, and usually to be disposed therewith after using. It should be noted that the cost of said tube cannot be disregarded in that it is provided with at least one dispensing valve which, as it is easily understood, one tries to provide in the most inexpensive way, although the results are not very satisfactory.

As it is also known, in particular for containing liquid food products, there have been recently manufactured and sold bags and cartridges having a smaller volume and being more self-supporting, whereby they can be more easily introduced in liquid soap dispensers when they are used for this purpose. The side of the cartridge which is normally heat sealed and facing downwards after the cartridge has been tipped over for product delivery, is normally fitted with an outside threaded dispensing port usually thermally sealed thereto. If a dispensing arrangement there is in turn provided with internal threads, it will be possible to reuse it many times for different cartridges, without having to be disposed therewith.

US-A-4,773,569 discloses a sauce (or the like pasty product) dispenser having a container with a plane end face and an opposite, truncated end face for attachment of an outlet pipe of flexible material enclosing a valve member. This comprises two valve bodies interconnected to each other by a rod, with the upper big body thereof having a seat in a throat-shaped restriction of the truncated end face.

It is an object of this invention to provide a dispensing arrangement for liquid soap dispensing apparatus as disclosed in independent claim 1. Dependent claims 2-4 disclose preferred features of the invention.

Therefore, this type of dispensing member has the advantage that, in addition to being reusable for a number of supply cartridges, it requires simpler dispensing apparatus to be used, as the check valve function is built into said dispensing arrangement, and does not need to be performed by the dispenser.

Further objects, advantages and features of the dispensing arrangement of this invention will become more apparent from the following detailed description, referring to the attached drawings, wherein:

Figure 1 shows an exploded view, partially in vertical section, of the dispensing arrangement according to

this invention, close to the outlet threaded plug of a supply cartridge; and

Figure 2 is a vertical sectional view of said dispensing arrangement, being threaded on the delivery cartridge.

Referring now to the drawings, dispensing arrangement 1 for liquid soap dispenser apparatus includes an elongated tubular member 10 of a resilient material, like for instance rubber, having mounted at the upper end thereof a check valve 12 provided with a poppet-shaped valve member 11. At the lower end of tube 10 there is provided a dispensing valve 14 adapted to retain the liquid from coming out when tube 10 is not subjected to pressure, whereby the liquid thereabove is not compressed and cannot overcome the force of spring 15. Only in this case liquid can flow out of lower opening 20, while normally spring 15 biases displaceable ball-shaped or poppet-shaped movable member 16 to bear against seat 16a thereof, in order to interrupt a downward liquid flow through opening 17. According to this invention, the casing of valve 14 is a rigid cartridge 18 made for instance of a thermoplastic material, and which is introduced from the top, together with members 15 and 16 within tube 10, until it goes to abut, with a slight interference fit due to the resiliency of tube 10, against the lower end thereof, which is shown at 10a in Figure 1, having preferably a reduced cross section compared to the remaining portions of the tubular member.

At the upper end of tube 10, the dispensing arrangement of this invention has a nut member 4 provided with a central recess 5 adapted to enable the member to be connected to protruding plug 3 of cartridge 2. As it is shown in the drawings, the wall surrounding said recess 5, within nut 4, has a thread 8 for threading engagement with plug 3 outer thread. In addition, the bottom of said recess 5 has a disc-shaped area 7 provided with a center opening 13 for possibly receiving valve member 11 of check valve 12 when, being pushed upwards by the internal pressure of tube 10 being squashed, it prevents the liquid therewithin from flowing back upwards into supply cartridge 2. Around area 7 and perpendicular thereto there projects a small collar 19 adapted to fit into delivery port 3 of cartridge 2, in a sealed engagement therewith. Still according to this invention, the cross section of nut 4 is sufficiently wide to have a large enough bearing area against a support member, for instance a fork-shaped member provided inside the dispenser. According to a preferred embodiment, around the periphery of nut 4 there is provided a circumferential recess or groove 6 for possible insertion of the nut within a support member of said dispenser, which may be more suited to support the dispensing arrangement in such a way, than through a direct support of said nut. From the above, the advantage of a dispensing arrangement according to this invention should be apparent, in that it may be re-used many times, when cartridge 2 is replaced, which cartridge may be easily removed by unscrewing followed by screwing in of a new cartridge and by the insertion of the dispensing

arrangement on the dispenser support. The latter may be quite simple in construction, in that it is not required to be designed for the motion providing the check valve function, already included in the dispensing assembly. Furthermore, according to a non-secondary aspect of this invention, nut 4 comprises a wide and secure bearing base, possibly with a clamping effect in slot 6, not only for the whole dispensing arrangement but also for cartridge 2, on a structure member (not shown) of the dispensing device, without incurring in those problems of position uncertainty which affect known dispensing arrangements, integral with the supply cartridges, and which are caused also by the fact that this type of dispenser with a built-in cartridge is usually less self-supporting.

It should eventually be noticed how convenient is the assembly procedure which does not require any adhesive to be used for the encased dispensing valve which is inserted with a slight fit at the lower end of tube 10. Possible additions and/or modifications may be made by those skilled in this art to the embodiment, as described and shown above, of the dispensing arrangement according to this invention which, as it is understood, will not be limited to what has been described herein above, but will encompass any possible mechanical variation or equivalent approach which can provide the same benefits.

Claims

1. A dispensing arrangement for liquid soap product dispensing apparatus, including a resilient material elongated tubular member (10) provided at a first end with means (4) for connecting to a dispensing port (3) of a product supply cartridge (2) and, at the opposite end of member (10), a built-in dispensing valve (14), wherein said means (4) comprises a rigid material nut provided with an internal thread (8), characterized in that said nut is integrally mounted to said member (10) and that said internal thread (8), surrounds a recess (5) which is coaxially provided within said nut and is defined at the bottom by a wall (7) integral with nut (4), having a central through opening (13) adapted to provide the passage opening and the seat for a check valve (12) having a movable member (11) and being built-in at said first end of said member (10).
2. The dispensing arrangement according to claim 1, characterized in that the outer periphery of nut (4) has a deep circumferentially extending groove (6).
3. The dispensing arrangement of claim 3, characterized in that it includes, in a peripheral position relative to said wall (7), a circumferentially projecting collar (19) adapted to sealingly engage said port (3) of cartridge (2).
4. A dispensing arrangement according to any one of the preceding claims, characterized in that said dispensing valve (14) has a resiliently compressible member (15) and a moving member (16) within a rigid material cartridge (18) which is provided with an internal seat (16a) for said moving member (16) at the position of a central through opening (17), cartridge (18) being adapted to be retained into position by the resiliency of the material of member (10) at the free end area (10a) thereof, having a smaller cross section, and being provided with a dispensing opening (20) at the end thereof.

Patentansprüche

1. Abgabevorrichtung für einen Flüssigseifenspender, mit einem langgestreckten Tubusteil (10) aus elastischem Material, das an einem ersten Ende mit einer Einrichtung (4) für eine Verbindung mit einer Auslaßöffnung (3) einer Versorgungspatrone (2) für ein Produkt versehen ist, und an dem gegenüberliegenden Ende des Tubusteils (10) mit einem eingebauten Abgaveventil (14) versehen ist, wobei die Einrichtung (4) eine Mutter aus festem Material enthält, die mit einem Innengewinde versehen ist, dadurch gekennzeichnet daß die Mutter einstückig mit dem Tubusteil (10) verbunden ist, und daß das Innengewinde (8) in einer Aussparung (5) vorgesehen ist, die koaxial mit der Mutter vorgesehen ist, wobei die Aussparung (5) an ihrem Boden durch eine Wand (7) begrenzt ist, die einstückig mit der Mutter (4) ausgeführt ist, wobei die Wand (7) eine zentrale Durchgangsöffnung (13) aufweist, die ausgelegt ist, um die Durchgangsöffnung zu schaffen und den Sitz für ein Rückschlagventil (12) zu liefern, das ein bewegliches Teil (11) aufweist und an dem ersten Ende des Tubusteils (10) eingebaut ist.
2. Abgabevorrichtung nach Anspruch 1, dadurch gekennzeichnet, daß der äußere Umfang der Mutter (4) eine tiefe, sich außen erstreckende Nut (6) aufweist.
3. Abgabevorrichtung nach Anspruch 2, dadurch gekennzeichnet, daß sie, in einer Umfangsposition bezüglich der Wand (7) einen vom Umfang vorstehenden Kragen (19) enthält der ausgelegt ist, um auf versiegelnde Weise in die Öffnung (3) der Patrone (2) einzugreifen.
4. Abgabevorrichtung nach einem der vorhergehenden Ansprüche dadurch gekennzeichnet, daß das Abgaveventil (14) ein elastisch zusammendrückbares Teil (15) und ein sich bewegendes Teil (16) innerhalb einer Patrone (18) aus festem Material aufweist, wobei die Patrone (18) mit einem internen Sitz (16a) für das sich bewegendes Teil (16) an der Stelle einer zentralen Durchgangsöffnung (17) versehen ist, wobei die Patrone (18) so ausge-

legt ist, daß sie durch die Elastizität des Materials des Teils (10) im Bereich (10a) des freien Endes desselben in Position gehalten wird, wobei dieser Bereich (10a) einen geringeren Querschnitt aufweist und mit einer Auslaßöffnung (20) an seinem Ende versehen ist. 5

Revendications

1. Montage distributeur pour un distributeur de savons liquides comprenant un élément tubulaire allongé (10) en matériau élastique pourvu à une première extrémité d'un moyen (4) de liaison avec un orifice de distribution (3) d'une cartouche (2) de produit et, à l'extrémité opposée de l'élément (10), se trouve une vanne de distribution (14), dans lequel ledit moyen (4) comprend un écrou en matériau rigide portant un filetage interne, caractérisé en ce que ledit écrou est intégralement monté sur ledit élément (10) et en ce que ledit filetage interne (8) entoure un évidement (5) qui est formé coaxial à l'intérieur dudit écrou, et qui est délimité à la partie inférieure par une paroi (7) intégrée à l'écrou (4), présentant un orifice central traversant (13) conçu pour constituer l'ouverture de passage et le siège d'un clapet de retenue (12) ayant un élément mobile (11) et qui se trouve incorporé à ladite première extrémité dudit élément (10). 10 15 20 25
2. Montage distributeur selon la revendication 1, caractérisé en ce que la périphérie extérieure de l'écrou (4) porte une rainure profonde (6) disposée le long de la circonférence. 30
3. Montage distributeur selon la revendication 2, caractérisé en ce qu'il comprend, dans une partie périphérique relative de ladite paroi (7), un collier en saillie (19), le long de la circonférence, prévu pour venir en prise étanche avec ledit orifice (3) de la cartouche (2). 35 40
4. Montage distributeur selon l'une quelconque des revendications précédentes, caractérisé en ce que ladite vanne de distribution (14) comporte un élément élastique compressible (15) et un élément mobile (16) à l'intérieur d'une cartouche en matériau rigide (18), laquelle est pourvue d'un siège interne (16a) pour ledit siège mobile (16) dans la position d'un orifice central traversant (17), la cartouche 18 étant adaptée à être maintenue en position par l'élasticité du matériau de l'élément (10), à la surface de l'extrémité libre (10a) de cet élément, ayant une section transversale plus petite et étant pourvue d'une ouverture de distribution (20) à son extrémité. 45 50 55

